PRESS RELEASE

ASN Contact: Christine Feheley
(202) 640-4638 | cfeheley@asn-online.org

POPULATION-LEVEL STUDY PROVIDES REASSURING DATA ON THE RISK OF KIDNEY DISEASE RELAPSE AFTER COVID-19 VACCINATION

A second or third dose of COVID-19 vaccine was associated with higher relative risk but low absolute increased risk of glomerular disease relapse.

Highlights

- In a population-level study of 1,105 adults with stable glomerular disease (a type of autoimmune kidney disease), a first dose of a COVID-19 vaccine was not associated with relapse risk; however, receiving a subsequent vaccine dose was associated with a 2-fold higher relative risk of relapse.
- Importantly, the increase in absolute risk associated with vaccination was low (1–5% depending on type of glomerular disease), and most vaccine-associated disease flares were mild.

Washington, DC (November 3, 2022) — Several reports have described a relapse of certain autoimmune kidney diseases in patients after they've received COVID-19 vaccines, but it's unclear if this association is real or a coincidence. In a recent population-level study published in *JASN*, investigators found that a second or third dose of COVID-19 vaccine was associated with higher relative risk but low absolute increased risk of disease relapse.

People with glomerular diseases—a group of autoimmune kidney disease that often require long-term treatment with medications that suppress the immune system—face a high risk of developing serious infections, and are more likely to experience complications of infections such as from COVID-19. As vaccination programs were rolled out, individual case reports began to emerge describing flares of glomerular disease that occurred within days to weeks of COVID-19 vaccines, suggesting the vaccine itself may have induced a flare of the autoimmune kidney disease. These reports were very limited and, in the absence of a control population, were unable to provide accurate estimates of the true risk of disease flare that may be associated with COVID-19 vaccines.

To provide clarity, a team led by Sean Barbour, MD, MSc (University of British Columbia) and Mark Canney, MD, PhD (University of Ottawa) studied information on all patients in British Columbia, Canada who had the following glomerular diseases: minimal change disease, focal segmental glomerulosclerosis, membranous nephropathy, IgA nephropathy, lupus nephritis, anti-neutrophil cytoplasmic antibody–related

glomerulonephritis, and C3 glomerulonephritis. By capturing all patients with biopsy-confirmed glomerular disease in a centralized provincial database with linkage to both laboratory data and vaccination status over time, the researchers quantified the absolute and relative risk of glomerular disease relapse following COVID-19 vaccination.

The analysis identified 1,105 adults with glomerular disease that was stable when COVID-19 vaccines first became available. During 281 days of follow-up, 134 patients (12.1%) experienced a relapse. Although a first vaccine dose was not associated with relapse risk, exposure to a second or third dose was associated with a 2-fold higher **relative** risk of relapse; however, the **absolute** increase in risk of disease flare after these doses was still small, ranging from 1–5% depending on the type of glomerular disease. Most vaccine-associated disease flares were mild, with approximately 1 in 5 people needing any change in treatment.

“These results indicate that although COVID-19 vaccines may be associated with a small increase in risk of causing a flare of glomerular disease, this risk is very small, and the well-established benefits of vaccination more that outweigh these risks,” said Dr. Barbour. “This should encourage people with glomerular disease to continue to get regular COVID-19 vaccinations. Our findings also suggest that people with glomerular disease should have careful monitoring after COVID-19 vaccinations to capture any early flare of their disease.”

Dr. Barbour added that the study demonstrates how individual reports of vaccine side effects can result in unnecessary angst and worry amongst people deciding about whether to receive COVID-19 vaccines. Instead, proper studies need to be conducted to provide estimations of actual risk, so that people can be properly informed. “In this study, we confirmed initial reports of a potential complication of COVID-19 vaccines, however we also demonstrate that this risk is very small and the severity of the complication was quite mild,” Dr. Barbour said.

An accompanying editorial notes that the findings provide important information when discussing the *pros* and *cons* of COVID-19 vaccination with patients with glomerular disease.

Additional co-authors include Mohammad Atiquzzaman, PhD, Amanda M. Cunningham, MD, Yuyan Zheng, MSc, Lee Er, MSc, Steven Hawken, PhD, and Yinshan Zhao, PhD.

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The article, titled “A population-based analysis of the risk of glomerular disease relapse after COVID-19 vaccination,” will appear online at http://jasn.asnjournals.org/ on November3, 2022; doi: 10.1681/ASN.2022030258.

The editorial, titled, “mRNA COVID-19 vaccines and their risk to induce a relapse of glomerular diseases” will appear online at http://jasn.asnjournals.org/ on November 3, 2022; doi: 10.1681/ASN/2022091078.

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